FREQUENTLY ASKED QUESTIONS - HUMAN EXPOSURE UNDER CONTROL (HE) AND MIGRATION OF CONTAMINATED GROUND WATER UNDER CONTROL (GM) ENVIRONMENTAL INDICATORS

What Does "Human Exposure Under Control" Mean?

When a site is designated as Human Exposure Under Control it means that contamination levels at a site are within the levels designated by EPA as safe, or if they are found unsafe, EPA has taken measures (by treating, containing, or stabilizing contamination) to insure that contamination will not pose a threat to humans. A Human Exposure Under Control determination is made by examining the current conditions at a site (the status of the site in the future is not considered). Human Exposure Under Control can then be achieved by meeting one of the three following scenarios:

- Human exposure is considered under control if contaminant levels in media (soil, surface water, sediment, air, ground water) are know to be within levels designated by EPA as safe.
- If media is know or suspected to be contaminated at levels designated by EPA to be unsafe, Human Exposure is considered Under Control when human contact to contaminated media (soil, surface water, sediment, air, ground water) is not expected to occur;
- If media is known or suspected to be contaminated at levels designated by EPA to be unsafe, and human contact with the contaminated media is possible, the contamination has been either treated, contained, or stabilized so that exposure to contamination would pose no threat to humans.

What Does "Human Exposure Not Under Control" Mean?

When a site is designated as Human Exposure Not Under Control, it means that contamination has been detected at a site at an unsafe level, and the possibility exits that humans may come into contact with the contamination, and the contamination has not been treated, stabilized, or contained well enough to prevent human exposure to contamination. A site will be designated as "Human Exposure Not Under Control," when the following site conditions are met:

- contaminant levels in media (soil, surface water, sediment, air, ground water) do not fall within the category designated as safe by EPA; and
- the possibility exists that humans may come into contact with the contaminated media; and
- the level of contaminants humans would be exposed to by the contaminated media does not fall within levels designated as safe by EPA.

What does "Migration of Contaminated Ground Water Under Control" mean?
At sites where ground water is suspected to be contaminated, a site is designated as Migration of Contaminated Ground Water Under Control by examining the current conditions at a site (the status of the site in the future is not considered), and tests must indicate that ground water at the site has not been found to be contaminated. If tests indicate that the ground water is contaminated, then the following conditions must be met:

- the migration of the contaminated ground water has been stabilized so that it will not spread;
- the contaminated ground water is not contaminating any nearby surface water; and
- samples will be taken on a regular basis to make sure ground water contamination does not spread in the future.

What does "Migration of Contaminated Ground Water Not Under Control" mean?
At sites where ground water is suspected to be contaminated, a site is designated as "Migration of Contaminated Ground Water Not Under Control" when tests show that the ground water is contaminated, and one of the following four circumstances are met:

- if the ground water has been stabilized to prevent the spread of contamination, but ground water and surface water has not yet been monitored to insure that contamination has not spread; or
- if the migration of the contaminated ground water has not been stabilized to prevent spreading; or
- if migration has been stabilized to prevent spreading and the ground water has been found to be draining into and contaminating a surface water body; or
- if migration has been stabilized to prevent spreading, and the ground water has been found to be draining into, but not contaminated a surface water body, but there are no plans to monitor the ground water and surface water to insure that contamination has not spread.

What Does an "Insufficient Data" determination for the Human Exposure Under Control and Migration of Contaminated Ground Water Under Control Indicators Mean?

An Insufficient Data determination is made when there is not enough information to determine whether Human Exposure or Migration of Contaminated Ground Water is or is not under control.

What sites require Human Exposure and Migration of Contaminated Ground Water Under Control determinations?

All sites that are on the National Priorities List require a Human Exposure Under Control determination. All sites on the National Priorities List that have evidence of ground water contamination require a Migration of Contaminated Ground Water Under Control determination.

How often must the HE and GM status be reviewed?
At a minimum, sites are required to be reviewed by October 15 of each year, however the HE and GM status should be reviewed whenever conditions at a site change.

Who determines the HE or GM status? Each NPL site is assigned a Remedial Project Manager (RPM). The RPM is the EPA official in charge of site cleanup. It is the responsibility of the RPM to make the final HE or GM determination based on the data currently available for the site.

Can an HE or GM status at a site change once it has been designated as "Under Control?"
Yes, in certain cases site conditions may change such that a determination of HE or GM "Under Control" must be changed to HE or GM "Not Under Control" (e.g. new soil samples may show a contaminant is found to be at levels designated by EPA as unsafe). Therefore, it is important that the HE and GM status of a site be reviewed yearly, at a minimum.

What is the National Priorities List (NPL)?
The NPL is EPA's list of most serious or uncontrolled abandoned hazardous waste sites identified for possible long-term cleanup action.

What are exposure pathways? Exposure pathways are the physical course a contaminant takes from its source to the human receptor(s). Receptors can be exposed through the following pathways: soil, air, ground water, surface water, and sediment.

What are receptors? Receptors are those exposed or potentially exposed to a contaminant. Common types of receptors include: individual, residential, industrial, commercial, schools, recreational, hospitals, and trespassers.

What information does EPA use to make determinations? EPA reviews documents that contain background information about the site. These documents include:

RI/FS reports - Reports consisting of a Remedial Investigation (RI) and Feasibility Study (FS). These reports can be done independently of one another but are usually included together. The RI is a study designed to establish cleanup criteria, identify alternatives for how cleanup should proceed, and provide an analysis of cleanup cost for each alternative. The FS provides an analysis of the whether the proposed alternatives are practical and will provide useful data.

Record of Decision (ROD) - A document that describes which cleanup methods will be used at a site.

Pollution Reports (POLREPS) - A report describing, site background, and the actions taken or planned to address contamination.

Close Out Reports - A report that verifies that the conditions of the site comply with the ROD findings and cleanup design specifications and that cleanup performed at the site will achieved protection of human health and the environment.

Five Year Reviews - A report conducted every five years after a remedy at a site has been

implemented. The Five Year Review evaluates the effectiveness of a remedy and determines if the remedy continues to protect human health.

What are appropriately protective risk-based levels?
Appropriately protective risk-based levels are those identified by a state or federal statue that pertain to protection of human life and the environment in addressing specific conditions or use of a particular cleanup technology at a Superfund site.

What is the cancer risk?
Cancer risk is the theoretical risk for getting cancer if exposed to a particular substance every day for 70 years.

What is a Hazard Index (HI)?
For non-cancer causing substances a hazard index is used to determine whether adverse effects will result from human exposure to a substance. The hazard index is calculated by adding the hazard quotients (the sum of the ratio of a potential exposure to a substance to the level at which no adverse effects are expected for a group of substances that affect an organ or organ system) for substances that affect the same target organ or organ system. A hazard index of 1 or less will not likely result in any adverse human health effects.